

## **ABSTRACT**

The Iowa Method for bridge deck overlays has been very successful in Iowa since its adoption in the 1970s. This method involves removal of deteriorated portions of a bridge deck followed by placement of a layer of dense (Type O) Portland Cement Concrete (PCC). The challenge encountered with this type of bridge deck overlay is that the PCC must be mixed on-site, brought to the placement area and placed with specialized equipment. This adds considerably to the cost and limits contractor selection, because not all contractors have the capability or equipment required.

If it is possible for a ready-mix supplier to manufacture and deliver a dense PCC to the grade, then any competent bridge deck contractor would be able to complete the job. However, Type O concrete mixes are very stiff and generally cannot be transported and placed with ready-mix type trucks. This is where a “super-plasticizer” comes in to use. Addition of this admixture provides a substantial increase in the workability of the concrete - to the extent that it can be delivered to the site and placed on the deck directly out of a ready-mix truck. The objective of this research is to determine the feasibility of placing a deck overlay of this type on county bridges within the limits of county budgets and workforce/contractor availability.